

REMARKS

In the Office Action mailed June 22, 2004, claims 1-2, 4-6 and 10 are rejected under 35 USC §102(b) as being anticipated by Akao et al., (US Patent 5,307,464, hereinafter "Akao"). Claims 3 and 11-13 are rejected under 35 USC §103(a) as being obvious over Akao in view of Applicant's admission in paragraphs 15-16.

I. US Patent 5,307,464 to Akao

Akao relates to a single chip microprocessor comprising a central processing unit and a means for implementing its peripheral functions embedded in the same semiconductor package as the central processing unit. That is, Akao indicates that single chip microcomputers have a variety of on-chip hardware peripheral circuits. Akao also discloses a method for setting up the peripheral functions of the microprocessor. Akao addresses deficiencies of conventional single chip microprocessors, such as modifying operation specifications and functions of a microcomputer, by implementing peripheral functions through software which is stored in electrically writable non-volatile memory elements. (Col. 1, lines 8-59). However, Akao fails to disclose or suggest the use of configurable blocks as claimed by Applicant, and as will be described in more detail below, teaches away from Applicant's invention.

II. Claims 1-2, 4-6 and 10 as amended are not anticipated by Akao

In response to the suggestion in the Office Action that a ROM, RAM and address registers are gate arrays which are field programmable, and therefore by definition are FPGAs, Applicant respectfully disagrees. Applicant claims a "configurable peripheral device comprising a configurable logic block." It is well established that words in a claim must be read as they would be interpreted by those of ordinary skill in the art. Applicants note that a RAM, ROM and address registers alone would not comprise "a configurable logic block" as claimed.

However, Applicant has further amended independent claims 1 and 6 to indicate that the integrated circuit comprises "a programmable routing matrix coupled

to said configurable logic block, said_programmable routing matrix coupling signals to and from said configurable logic block.” Support for the amendment can be found in Chapter 3 of “The Programmable Logic Data Book 2000” on pages 3-7 through 3-12. Applicant respectfully submits that Akao also fails to disclose or suggest a programmable routing matrix coupled to the configurable logic block, as claimed by Applicant.

It should also be noted that Akao teaches away from employing configurable logic in a microprocessor-based integrated circuit. A prior art reference must be considered in its entirety, i.e. as a whole, including portions that would lead away from the claimed invention. *W.L. Gore and Associates, Inc. V. Garlock, Inc.*, 721 F.2d 1540 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). A review of the entire Akao reference clearly establishes that the purpose of the Akao circuit is to implement peripheral functions in software, and not configurable logic. In particular, Akao indicates that the microprocessor 1 “is superior in that information for defining peripheral functions can be generated easily at a high speed due to the fact that peripheral functions implementable by the sub-processor 5 are defined by a microprogram.” Akao further indicates that while operation control signals can also be generated by a wired logic configuration utilizing PLDs, “the logic design for defining peripheral elements inevitably requires much time and, in addition, the increased number of gate stages also introduces time delays in the operation.” (Col. 32, lines 19-30). Akao further indicates that the fact that implementable peripheral functions are defined by a microprogram enable “an easier and faster generation of information defining the peripheral functions than a wired logic configuration employing PLDS, PLAs or others.” (Col. 34, lines 27-31). Accordingly, Akao teaches away from Applicant’s invention as claimed, and the claims as amended are clearly allowable over the Akao.

Applicant further submits that claims 3 and 11-13, which are based upon independent claims 1 and 6, are not obvious over Akao in view of Applicant’s disclosure in paragraphs 15-16. Applicant submits that all of the dependent claims are allowable for the same reasons that independent claims 1 and 6 are believed

allowable.

III. New Claims


Applicant adds new claims 15-22, including independent claims 15 and 19. Applicant respectfully submits that the new claims are also allowable over Akao, and that no new matter is introduced by the new claims.

CONCLUSION

All claims should be now be in condition for allowance and a Notice of Allowance is respectfully requested.

If there are any questions, the Applicant's attorney can be reached at Tel: 408-879-6149 (Pacific Standard Time).

Respectfully submitted,

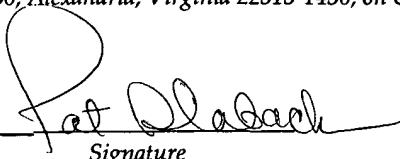


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